



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,797	03/15/2005	Hiroyuki Tomizawa	743421-81	7499
22204	7590	66/01/2009	EXAMINER	
NIXON PEABODY, LLP			SHEEHAN, JOHN P	
401 9TH STREET, NW			ART UNIT	PAPER NUMBER
SUITE 900			1793	
WASHINGTON, DC 20004-2128			MAIL DATE	DELIVERY MODE
			06/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/527,797	<b>Applicant(s)</b> TOMIZAWA ET AL.
	<b>Examiner</b> John P. Sheehan	<b>Art Unit</b> 1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 March 2009.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,2 and 4-7 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,2 and 4-7 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 24, 2009 has been entered.

### ***Claim Interpretation***

2. Product claims 1, 2 and 4 recite the transitional term, "comprising" (e.g. claim 1, line 2) which is open terminology that leaves the claim open to any unrecited elements even in major amounts. Product claims 1, 2 and 4 have been interpreted accordingly.  
3. In like manner, process claims 5 and 6 recite the transitional term, "comprising" (e.g. claim 5, line 2) which is open terminology that leaves the claim open to any unrecited process steps. Process claims 5 and 6 have been interpreted accordingly.

The transitional term "comprising ",which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional,unrecited elements or method steps.See,c.g.,*Genentech,Inc.v.Chiron Corp .*, 112 F.3d 495,501,42 USPQ2d 1608,1613 (Fed.Cir. 1997)(“Comprising ”is a term of art used in claim language which means that the named elements are essential,but other elements may be added and still

form a construct within the scope of the claim.);  
*Molekulon Research Corp.v.CBS,Inc.*,793 F.2d  
1261,229 USPQ 805 (Fed.Cir.1986);*In re Baxter*,  
656 F.2d 679,686,210 USPQ 795,803 (CCPA 1981);  
*Ex parte Davis* ,80 USPQ 448,450 (Bd.App.1948)  
("comprising " leaves "the claim open for the inclu -  
sion of unspecified ingredients even in major  
amounts"). See MPEP 2111.03.

4. Process claim 7 recites the transitional phrase, "consisting essentially of" (claim 7, line 2).

The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original)... For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., *PPG*, 156 F.3d at 1355, 48 USPQ2d at 1355  
MPEP 2111.03

In view of this, method claim 7 is considered to be open to encompass any unrecited process steps.

5. Claim 4 recites, "an oxygen concentration of at most 0.5 mass%, a nitrogen concentration of at most 0.2 mass%, and a hydrogen concentration of at most 0.01 mass%" (emphasis added by the Examiner). The term, "at most" describes the upper

limit of the recited component, however no lower limit is claimed. Therefore this claim language is considered to encompass 0 mass%. Thus, claim 4 has been interpreted to not necessarily require the presence of oxygen, nitrogen or hydrogen.

6. Amended claim 5, line 3 and new claim 7, line 3 recite, "a powder composition comprising" the listed elements in the recited proportions. This language encompasses the embodiment wherein the recited powder is actually a powder mixture which comprises a mixture of R powder, T powder Ga powder, B powder and optionally Co powder.

#### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 5, 6 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

I. In claim 5, the penultimate line, the new limitation, "a single heat treatment" is an exclusionary limitation and does not find support in the application as filed.

Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively

Art Unit: 1793

recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining."). See also *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.*, 38 F.2d 453 (Fed. Cir. 1984). The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Note that a lack of literal basis in the specification for a negative limitation may not be sufficient to establish a *prima facie* case for lack of descriptive support. *Ex parte Parks*, 30 USPQ2d 1234, 1236 (Bd. Pat. App. & Inter. 1993). See MPEP § 2163 - § 2163.07(b) for a discussion of the written description requirement of 35 U.S.C. 112, first paragraph. See MPEP 2173.05(i), last paragraph.

II. Amended claim 5, line 3 and new claim 7, line 3 recite, "a powder composition comprising" the listed elements in the recited proportions. This language encompasses the embodiment wherein the recited powder is actually a powder mixture which comprises a mixture of R powder, T powder, Ga powder, B powder and optionally Co powder. Such an embodiment does not find support in the application as filed.

#### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as obvious over Uchida et al. (Uchida '365, US Patent No. 6,468,365, cited in the IDS submitted March 15, 2005).

Uchida '365 teaches a R-T-B sintered magnets having a composition that overlaps the sintered R-T-B magnet composition recited in applicants' claims (column 3, lines 54 to 62). Further, Uchida '365 teaches that 0.01 to 0.3 wt% gallium (Ga) drastically improves the iHc (coercivity) of the R-T-B sintered magnet (column 4, line 66 to column 5, line 5). Thus, the following comparison of Uchida '365 disclosed composition and applicants' claimed composition demonstrates that the two compositions overlap.

<u>Element</u>	<u>Uchida '365</u>	<u>Applicants' Claims</u>
Rare Earth	28 to 33 wt%	27.0 to 32.0 wt%
Boron	0.5 to 2 wt%	0.85 to 0.96 wt%
Ga	0.01 to 0.3 wt%	0.01 to 0.08 wt%
Fe or (Fe+Co)	Balance	63.0 to 72.5 wt%

Uchida '365 also teaches specific examples of R-T-B sintered magnets having compositions that, with the exception of the boron content, are encompassed by the R-T-B sintered magnet composition recited in applicants' claims 1, 2 and 4 (column 12, lines 17 to 25; column 13, lines 16 to 25; and column 14, lines 30 to 37). Each of Uchida '365's examples cited by the Examiner contains 0.97 wt% boron whereas the instant claims recite an upper boron content of 0.96 wt%. Thus, the instantly claimed boron content and the exemplified boron content taught by Uchida '365 closely approximate each other. Uchida '365 also teaches a process that is substantially the

same as applicants' disclosed process of making the instantly claimed R-T-B sintered magnets (for example compare applicants' disclosed process to each of column 12, lines 3 to 16; column 14, lines 10 to 20 and column 14, lines 16 to 25). Uchida '365's disclosed process includes a post sintering heat treatment at 500<sup>0</sup>C which is encompassed by the post sintering heat treatment step at 400<sup>0</sup>C to 600<sup>0</sup>C disclosed by applicants

The claims and Uchida '365 differ in that Uchida '365 does not teach the exact same proportions as recited in the instant claims and Uchida '365 is silent with respect to the relative proportions of the R<sub>2</sub>T<sub>14</sub>B and R<sub>1.1</sub>Fe<sub>4</sub>B<sub>4</sub> phases as recited in claim 1.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the proportions taught by Uchida '365 overlap the instantly claimed proportions and therefore are considered to establish a *prima facie* case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Further, in view of the fact that the composition of Uchida '365's R-T-B sintered magnets overlap the composition of the instantly claimed R-T-B sintered magnets and are made by a process which is similar to, if not the same as, applicants' process of making the instantly claimed R-T-B sintered magnets, Uchida '365's R-T-B sintered magnets would be expected to posses all the same properties as recited in the instant claims, *In re Best*, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, *In re Best*, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' *In re Spada*, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

Further, because Uchida '365's specific examples, cited above, contain 0.97 wt% gallium which closely approximates the instantly claimed upper limit of 0.96 wt% gallium, one of ordinary skill in the art would have expected the specific examples of R-T-B sintered magnets taught by Uchida '365 to have the same properties. See *in re Peterson*, 65 USPQ2d 1379, 1382, citing *Titanium Metals Corp. v. Banner*, 227 USPQ 773, 779 and MPEP 2144.05.

"a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed.Cir.1985)(Court held as proper a rejection of a claim directed to an alloy of "having 0.8%nickel,0.3%molybdenum,up to 0.1%iron,bal

ance titanium " as obvious over a reference disclosing alloys of 0.75%nickel,0.25%molybdenum,balance titanium and 0.94%nickel,0.31%molybdenum,balance titanium.).

11. Claim 5 is rejected under 35 U.S.C. 103(a) as obvious over Uchida et al. (Uchida '365, US Patent No. 6,468,365, cited in the IDS submitted March 15, 2005).

Uchida '365 teaches and is applied as set forth above. Uchida '365 teaches a process that is also encompassed by claim 5 (column 12, lines 3 to 16; column 14, lines 10 to 20 and column 14, lines 16 to 25). The process taught by each of the examples includes two heat treatments after sintering, a first heat treatment at 900<sup>0</sup>C and a second heat treatment at 500<sup>0</sup>C. Uchida '365's second heat treatment at 500<sup>0</sup>C step is encompassed by the post sintering heat treatment step at 400<sup>0</sup>C to 600<sup>0</sup>C recited in applicants' process claim 5 (claim 5, the last line).

Uchida '365 and claim 5 differ in that Uchida '365 teaches a second post sintering heat treatment step while applicants' claim 5 recites "a single heat treatment" (claim 5, penultimate line).

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because in view of the explanation set forth under the heading, "Claim Interpretation" regarding use of the open terminology, "comprising" in the applicants' claim 5, Uchida '365's second heat treatment at 900<sup>0</sup>C is encompassed by applicants' process claim 5.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (Uchida '365, US Patent No. 6,468,365, cited in the IDS submitted March 15, 2005). as applied to claim 5 above, and further in view of Li (US Patent No. 6,527,874).

Uchida '365 teaches and is applied as set forth above in the rejection of claim 5. Additionally, it is noted that Uchida '365 does not require any particular method of casting the R-T-B alloys.

Li teaches that strip casting improves the magnetic properties of R-T-B alloys (for example, see Figures 1 and 2 and column 3, lines 17 to 24).

Uchida '365 and claim 6 differ in that Uchida '365 is silent with respect to the specific method of casting the R-T-B alloys.

However, one of ordinary skill in the art at the time the invention was made would have been motivated to strip cast Uchida '365's R-T-B alloys so as to improve the magnetic properties of the R-T-B alloys as taught by Li.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as obvious over Uchida et al. (Uchida '365, US Patent No. 6,468,365, cited in the IDS submitted March 15, 2005).

Uchida '365 teaches and is applied as set forth above. Uchida '365 teaches a process that is also encompassed by claim 7 (column 12, lines 3 to 16; column 14, lines 10 to 20 and column 14, lines 16 to 25). The process taught by each of the examples includes two heat treatments after sintering, a first heat treatment at 900<sup>0</sup>C and a second heat treatment at 500<sup>0</sup>C. Uchida '365's second heat treatment at 500<sup>0</sup>C step is

encompassed by the post sintering heat treatment step at 400<sup>0</sup>C to 600<sup>0</sup>C recited in applicants' process claim 5 (claim 5, the last line).

Uchida '365 and claim 7 differ in that Uchida '365 teaches a second post sintering heat treatment step while applicants' claim 5 is silent with respect to a second heat treatment step.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because in view of the explanation set forth under the heading, "Claim Interpretation" regarding use of the open terminology, "consisting essentially of" in the applicants' claim 7, Uchida '365's second heat treatment at 900<sup>0</sup>C is encompassed by applicants' process claim 7.

#### ***Response to Arguments***

14. Applicant's arguments filed March 24, 2009 have been fully considered but they are not persuasive.
15. Applicants, relying on Figure 1 of the specification, argue that the claimed ranges recited in the instant claims yield unexpected results otherwise not realized by those of ordinary skill in the art. Applicants explain that Figure 1 shows that the coercivity of the sintered and heat treated sample including 0.96 % boron and 0.02 % of Ga had a much higher coercivity than the sintered but not heat treated including 0.96 % boron and 0.02 % of Ga. In making their comparison applicants are comparing a sintered and heat treated sample to a sintered but not heat treated sample. However, Uchida '365 teaches that a post sintering heat treatment. Thus, Ichida teaches a sintered and heat

treated product. In view of this, applicants' comparison does not compare the claimed invention to the closest prior art, Uchida '364, which teaches a sintered and heat treated product.

16. Applicants also argue that Figure 1 shows that coercivity of a sample containing no Ga is much lower than the sample containing Ga. This is not persuasive in that Uchida '365 teaches and exemplifies the use of Ga (column 4, line 66 to column 5, line 5; column 12, lines 17 to 25; column 13, lines 16 to 25; and column 14, lines 30 to 37).

17. Further, it is the Examiner's position that the data in applicants' Figure 1 indicates that there is little difference in the magnetic properties between a Ga containing alloy containing 0.96% B as recited in the instant claims and a Ga containing alloy containing 0.97 % B as specifically exemplified in Uchida '365. Actually, in some cases the Ga containing alloy containing 0.97% B as taught by Uchida '365 has better properties than the applicants' Ga containing alloy containing 0.96 % B, for example, see the intrinsic coercivity for the as sintered embodiment and the heat treated at 773<sup>0</sup>K embodiment.

18. Applicants' arguments, based on paragraph [0049] of the present U.S. Patent Application Publication No. US 2005/0268989 A1 (page 8 of applicants' response) are not persuasive. In making this argument applicants have not presented evidence in support of their position but rather applicants have cited a paragraph of the specification. However, "[i]t is well settled that unexpected results must be established by factual evidence. Mere argument or conclusory statements in the specification do not suffice." In re Deblauwe, 222 USPQ 191, 196 (Fed. Cir. 1984) (emphasis added by the Examiner). Mere lawyer's arguments and conclusory statements in the

Art Unit: 1793

specification, unsupported by objective evidence, are insufficient to establish unexpected results." In re Wood, Whittaker, Stirling and Ohta, 199 USPQ 137, 140 (CCPA 1978). Applicants' arguments cannot take the place of evidence in the record, MPEP 716.01(c)II.

19. Regarding claim 5, applicants argue that claim 5 recites subjecting the sintered magnet to a single heat treatment whereas Uchida '365 teaches a second heat treatment of the sintered magnet. This is not persuasive. As set forth above in the statement of the rejection, process claim 5 recites the transitional term, "comprising" (e.g. claim 5, line 2) which is open terminology that leaves the claim open to any unrecited process steps including Uchida '365's second heat treatment at 900<sup>0</sup>C.

The transitional term "comprising ",which is synonymous with "including," "containing," or "characterized by," is inclusive or open--ended and does not exclude additional,unrecited elements or method steps.See,e.g.,*Genentech,Inc.v.Chiron Corp .*, 112 F.3d 495,501,42 USPQ2d 1608,1613 (Fed.Cir. 1997)(“Comprising ”is a term of art used in claim language which means that the named elements are essential,but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp.v.CBS,Inc.*,793 F.2d 1261,229 USPQ 805 (Fed.Cir.1986);*re Baxter* , 656 F.2d 679,686,210 USPQ 795,803 (CCPA 1981); *Ex parte Davis* ,80 USPQ 448,450 (Bd.App.1948) (“comprising ” leaves “the claim open for the inclusion of unspecified ingredients even in major amounts ”). See MPEP 2111.03.

### ***Conclusion***

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571)

272-1249. The examiner can normally be reached on T-F (7:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Sheehan/  
Primary Examiner  
Art Unit 1793

JPS